

# **Sports Analysis Executive Summary**

**Group 4  
2021.02.24**

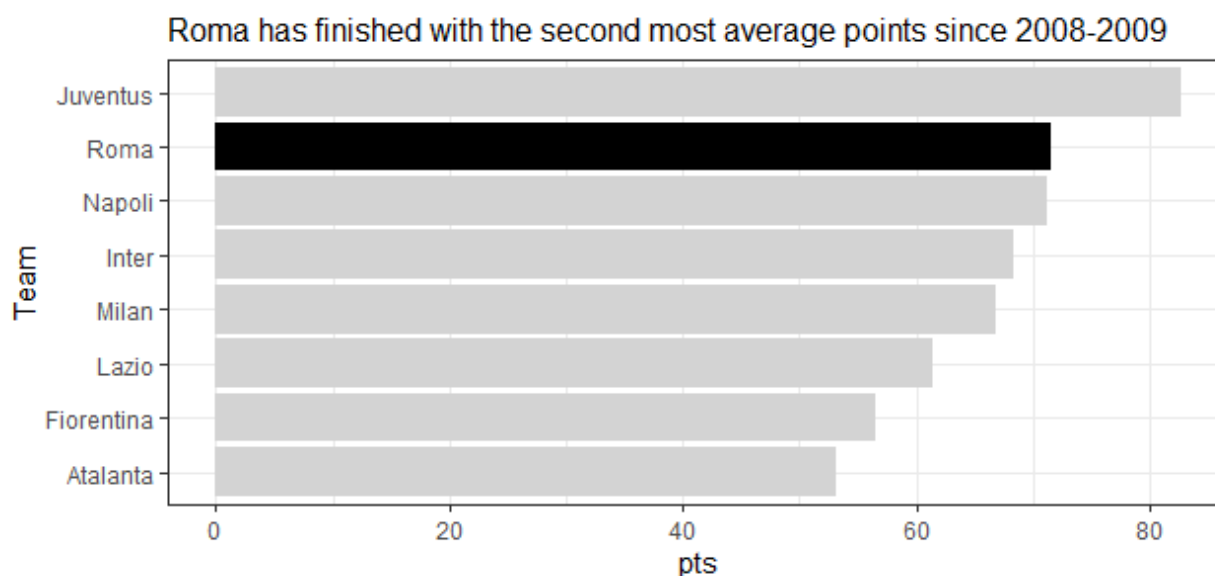
## Introduction

Our client, AS Roma, has consistently been one of the top teams in Italy Serie A since 2009. While this represents a quality team, Roma's performance can be further improved to earn more bids to the UEFA Champions' League. Qualifying for the Champions League will award the team greater prize money, build the team's exposure, and increase the fanbase. Our goal is to identify how far away we are now and how many more matches we need to win, opponents that we have consistently struggled against, and what strategies can be applied against those teams to improve our success in those matches.

We believe that if we play against Inter and Atalanta and convert our losses to win against them by playing more defensive against Atalanta with a team formation of 4-5-1 and semi defensive-offensive against Inter with a team formation of 3-4-3, our probability of winning against Atalanta and Inter will be 76% and 43% respectively which are higher than the current level.

## Background

Since the 2008-2009 season, Roma has consistently finished as one of the top teams in Serie A. In the below graph, you can see the top-performing teams: those that averaged over 50 pts each season.



Going one step further and looking at the Champions' League, since the 2008-2009 season, Roma has qualified for it in 6 of the 12 seasons. They earned automatic qualification five times and advanced through the qualifying stages once. However, in the past three seasons, Roma has qualified in just 1 of those seasons. Hence, we will focus our analysis for these past 3 seasons to analyze why the performance dropped. We will also get a good sample of over 100 matches played to analyze and indicate a play stretch where there is evident room for improvement.

UEFA updated qualification standards in 2018-2019, where the top 4 teams now earn automatic qualification. This table shows how many points Roma scored in each of the past 3 seasons compared to the last team that earned qualification to the Champions' League.

Season	Roma's points	4th place team's points
2017-2018	77	72
2018-2019	66	69
2019-2020	70	78

In the past 3 seasons, Roma finished 3rd, 6th, and 5th. They finished 5 points above 4th, 3 points behind 4th, and 8 points behind 4th, respectively. On average, for those 3 seasons, they finished 2 points below 4th place. We will examine each of Roma's matches from these 3 seasons and identify games in which Roma can improve.

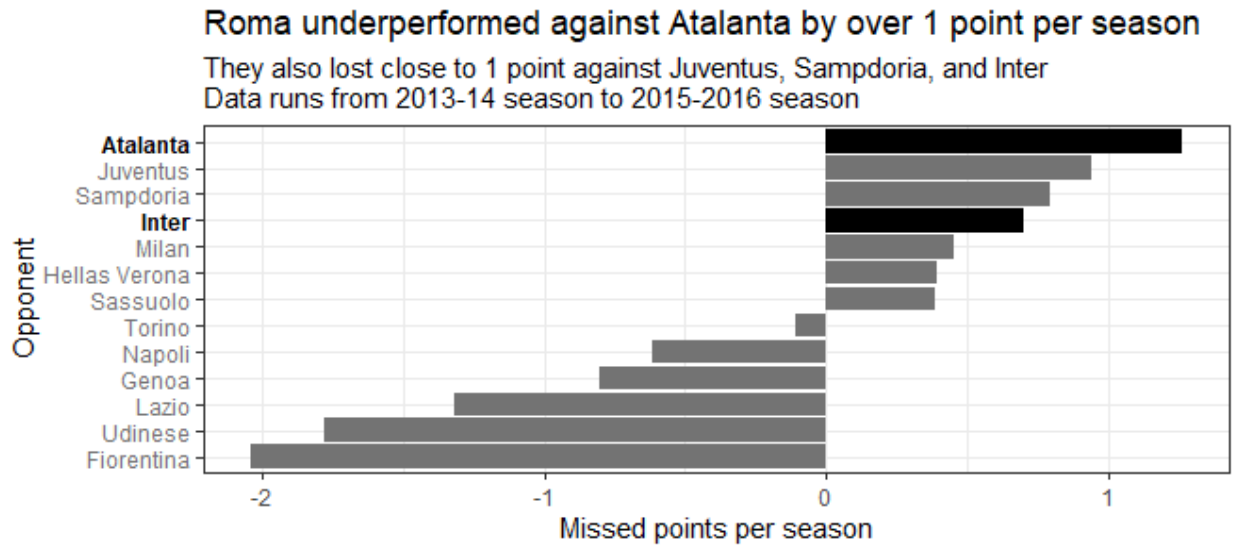
## Analysis and Findings

### 1.Specify Target Opponents

We want to help Roma earn 2 more points on average each season, so it can make it to the second tier of teams. To achieve this, we will identify teams that if we perform up to expectation then we can raise 2 more points.

The expectation is defined as an "implied probability", which is derived from the betting odds set by 10 different oddsmakers. This expectation(calculated as, the probability of a win \*3 + probability of a draw \*1 + probability of a lost \* 0) has been a consistent predictor on the result of a match with up to 53% accuracy.

Based on the expectations vs the actual results we have analyzed Roma's performance against all the teams.



The graph above shows the 13 teams that have been in Serie A the past 3 seasons as well as this season. The teams at the top are those that Roma underperformed against the most. The horizontal bar represents how many points we missed out on per season against each team. For example, Roma earned 1.3 points fewer than expected against Atalanta per season over those 3 seasons. Roma earned over 2 points each season from their matches against Fiorentina.

We sought to identify teams that if we perform up to expectations, we can raise our points by 2. Atalanta was a clear choice, as Roma performed substantially worse against them compared to the other teams. Moreover, Atalanta has finished in 7th, 3rd, and 3rd in Serie A the past 3 seasons, so our matches against them are even more important. Performing as expected against Atalanta would increase Roma's points by 1.3 each season on average.

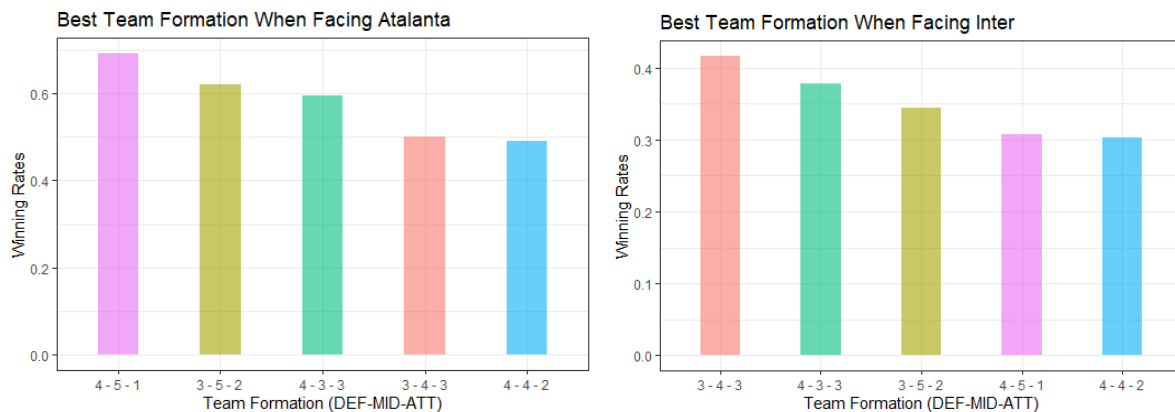
Roma performed similarly against Juventus, Sampdoria, and Inter compared to expectations. Since Inter is also a direct competitor to Roma for qualification (4th, 4th, 2nd place finishes), we decided we would target strategies to help Roma's performance against Inter also. Performing as expected against Inter would increase Roma's points by 0.7 on average. If Roma can perform at expectation against each of those two teams, they would score close to 2 points more on average each season. Furthermore, for each point they can gain against these opponents, that corresponds to one fewer point earned by Atalanta and Inter, which is an additional benefit for Roma's standing in the league table.

## 2.Strategies Against Target Opponents

After determining the target opponents, we developed strategies to improve Roma's competitiveness against them.

### Team formation strategies

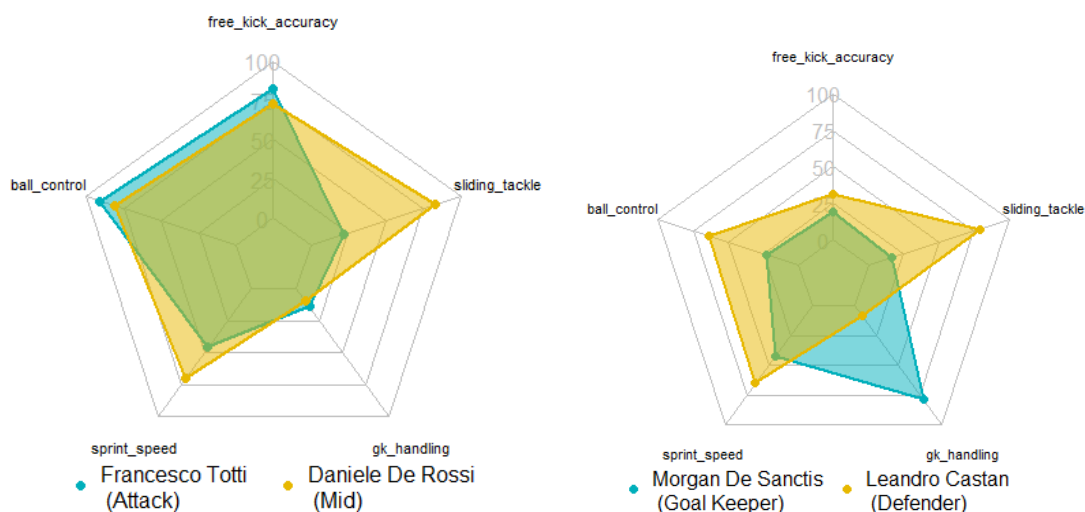
The best team formation strategy is 4-5-1 (4 defence, 5 mid, and 1 attack) when facing against Atalanta and 3-4-3 (3 defence, 4 mid and 3 attack) when facing against Inter.



We analyzed all the matches played by Atalanta and Inter respectively to find the most effective strategies for beating them. Amongst the games played against Atalanta, Roma has been historically using the 4-5-1 and 4-3-3 formations. However, the most effective team formation against Atalanta based on the historical winning rate is 4-5-1. Similarly, while Roma has been using the 4-3-3 formation more commonly when facing Inter Milan, 3-4-3 seems to be the most effective formation. Roma can switch to a less defensive and more flexible strategy to perform better against Inter Milan.

## Player Strategies

Besides team formation, teamwork is also vital during a soccer game. Good cooperators can complement each other to uncover their potential and improve the team's overall performance. We analyzed Roma's historical matches and found that: 1. Leandro Castan & Morgan De Sanctis are the best defensive pair. 2. Francesco Totti & Daniele De Rossi are the best attacking pair.



Leandro Castan & Morgan De Sanctis both have excellent defensive ability. According to the historical match results, matches that they played together had a 54% higher winning rate than matches that they played separately. Morgan and Leandro together can serve as a solid backline for the team. Francesco Totti & Daniele De Rossi both have good attacking abilities. Francesco has high kick accuracy and excellent ball control ability, which make him a good attacker. Daniele's sliding tackle skills added to the team's defence power while higher sprint speed made him more flexible to assist the frontline. According to the historical match results, matches that they played together had a 34.4% higher winning rate than matches that they played separately. Francesco Totti and Daniele De Rossi together can serve as a good forward combination.

Lastly, we have also analyzed the match statistics for Roma's matches against these opponents. Based on the analysis, the crossings we have done in a game and the number of corners taken seem to affect our chances of winning a game. Roma seems to have poor performance in converting corners and crossings, and it should focus on improving in these areas.

## **Conclusion**

After our analysis, we believe that Roma can increase its probability of finishing in the top 4 teams to qualify for the Champions League by converting their losses to win against Inter and Atalanta. To increase their competitiveness against those two teams, Roma can apply the following strategies respectively:

- Play more defensively against Atalanta with the team formation of 4-5-1.
- Play semi defensive-offensive with a team formation of 3-4-3 against Inter.
- Assign Leandro Castan & Morgan De Sanctis play together to improve Roma's defensive power
- Assign Francesco Totti & Daniele De Rossi to improve Roma's attacking ability.

## Appendix:

### 1. Assumption:

Roma's players stay the same over time.

### 2. Glossary:

In this section, we will present a brief introduction to the points that are mentioned in the technical and/or managerial document that might require some basic knowledge.

#### *Team Formation:*

A football, or soccer formation is a basic shape of a soccer team. Most football formations are described in numbers of outfield players from the defense forward [goalkeeper is usually not mentioned and is implied]. So 4-2-4 for example, means four defenders, two midfield players and four attackers. To be successful, a team must have some shape so that players know where they should play and where their teammates will be. Successful formations balance attack and defense and make the best use of the players in a team. In our analyses, defenders are abbreviated as DEF, midfield as MID and attackers are ATT. As mentioned above, the single player in the left of the picture is goalkeeper and is usually not mentioned [We follow the same convention].

